

**REMARKS/ARGUMENTS**

1. Objections to the claims:

Claims 11, 12, and 14 are objected to because they further limit the playing circuit of claim 10, not the method of claim 1. Appropriate correction is required.

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**Response:**

Claims 11 and 12 have been canceled, and are no longer in need of consideration. Claim 14 has been amended to depend on claim 10. Acceptance of the amended claims is respectfully requested.

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2. Rejection of claims 1-15 under 35 U.S.C. 102(e):

Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Tackin (US 7,180,892).

15 **Response:**

Independent claims 1 and 10 have been amended to overcome these rejections. Claim 1 now claims a method of determining whether a first or second voice signal is mixed with a low-frequency voice signal. The method counts the number of times that the amplitudes of the first and voice signals cross the standard level, and output first and second counting results, respectively. Then the first counting result is compared with the second counting result for determining whether the first voice signal or the second voice signal is mixed with the low-frequency voice signal.

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25 Claim 10 has been amended in a similar way, and recites that first and second detecting modules count the first and second counting results, which are then compared by a comparing module for determining whether the first voice signal or the second voice signal is mixed with the low-frequency voice signal. Support for the claim amendments is found throughout the specification, and is illustrated, for example, in Figures 2 and 3 of the instant application. No new

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matter is added.

On the other hand, Tackin teaches calculating a zero crossing count for a voice sample. The zero crossing count is then compared to a threshold for  
5 determining if the voice sample is classified as voiced or unvoiced or not. If the zero crossing count is greater than the threshold, the voice sample is classified as unvoiced.

However, Tackin does not teach “counting the number of times that the  
10 amplitude of the first voice signal crosses the standard level in the predetermined period, and outputting a corresponding first counting result” while also “counting the number of times that the amplitude of the second voice signal crosses the standard level in the predetermined period, and outputting a corresponding second counting result”. Furthermore, Tackin does not disclose comparing the  
15 first counting result to the second counting result to determine whether the first voice signal or the second voice signal is mixed with the low-frequency voice signal. Therefore, Tackin fails to teach the limitations contained in the currently amended claims 1 and 10.

Even though Tackin teaches comparing a zero crossing count for a voice  
20 sample to a threshold, there is no teaching or suggestion in Tackin’s disclosure that would prompt one skilled in the art to compare a first counting result to a second counting result to determine whether the first voice signal or the second voice signal is mixed with the low-frequency voice signal.

For these reasons, the applicant submits that claims 1 and 10 are patentable  
25 over the cited prior art. Furthermore, claims 4, 5, 7, 13, and 14 are dependent on claims 1 and 10, and should be allowed if their respective base claims are allowed. Reconsideration of claims 1, 4, 5, 7, 10, 13, and 14 is therefore  
30 respectfully requested.

3. Rejection of claims 16-19 under 35 U.S.C. 103(a):

Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tackin.

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**Response:**

Claims 16 and 17 have been canceled, and are no longer in need of consideration. Claims 18 and 19 are dependent on claim 10, and should be allowed if claim 10 is allowed. Reconsideration of claims 18 and 19 is therefore respectfully requested.

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4. Rejection of claim 20 under 35 U.S.C. 103(a):

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tackin in view of Jiang et al. (US 6,901,362).

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**Response:**

Claim 20 is dependent on claim 10, and should be allowed if claim 10 is allowed. Reconsideration of claim 20 is therefore respectfully requested.

20 5. Introduction to new claims 21-30:

New claims 21 and 26 further specify that the first voice signal is determined to be the voice signal that is mixed with the low-frequency voice signal when the second counting result is larger than the first counting result, whereas claims 22 and 27 describe the opposite situation. As described in paragraph [0019] of the specification, a background music signal can be distinguished from a low-frequency voice signal by respective number of zero crossings that each signal contains. By comparing the quantities of zero crossings within a given time period, the low-frequency voice signal can be identified.

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30 Claims 23-25 and 28-30 describe comparing the difference between the first

counting result and the second counting result with a threshold value. When the second counting result is larger than the first counting result and the difference between the first counting result and the second counting result is larger than the threshold value, the first voice signal is determined to be mixed with the low-frequency voice signal. Conversely, when the first counting result is larger than the second counting result and the difference between the first counting result and the second counting result is larger than the threshold value, the second voice signal is determined to be mixed with the low-frequency voice signal.

The new claims 21-30 are supported throughout the specification and the drawings, and no new matter is added.

As Tackin does not teach comparing the first counting result with the second counting result or comparing a difference between the first counting result and the second counting result with a threshold value, claims 21-30 are all patentable over the cited prior art. Consideration of claims 21-30 is therefore respectfully requested.

In view of the claim amendments and the above arguments in favor of patentability, the applicant respectfully requests that a timely Notice of Allowance be issued in this case.

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Sincerely yours,

Winston Hsu

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